

## REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 30, 32, and 33 have been canceled.

New claims 36-38 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-29, 31, and 34-38 are now pending in this application.

### Rejections under 35 U.S.C. § 103

#### Claims 1-6, 8, 10-19, and 21-29

Claims 1-6, 10-19, and 21-29 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Pub. No. 2002/0066553 to Fischer *et al.* (hereafter “Fischer”) in view of U.S. Patent No. 6,374,911 to Olson *et al.* (hereafter “Olson”). This rejection is respectfully traversed.

As noted by the Office on pages 4-7 of the Office Action, Fischer and Olson do not disclose or suggest a charge air-cooler comprising, among other things, a heat exchanger unit and first and second header boxes, wherein each header box includes a longitudinal bead, as recited in claim 1. Claims 2-6, 10-19, and 21-29 depend from claim 1.

For at least the reasons discussed above, Fischer and Olson do not render claims 1-6, 10-19, and 21-29 to be unpatentable because the combination of Fischer and Olson does not disclose or suggest all of the features of claim 1. Reconsideration and withdrawal of this rejection is respectfully requested.

#### Claims 7 and 20

Claims 7 and 20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fischer in view of Olson, and further in view of DE 1995785 to Heine (hereafter “Heine”). This rejection is respectfully traversed. Heine fails to remedy the deficiencies of

Fischer and Olson discussed above in regard to independent claim 1, from which claims 7 and 20 depend. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 8 and 30

Claims 8 and 30 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fischer in view of Olson, and further in view of U.S. Patent No. 6,302,196 to Haussmann (hereafter “Haussmann”). This rejection is respectfully traversed.

Haussmann discloses a heat exchanger with a cap 10 that includes a longitudinal crimp or bead projecting to the outside that forms an engagement groove 60. See Haussmann at col. 5, lines 6-10, and Figures 1, 2, and 5. However, the engagement groove 60 of Haussmann is not configured such that the cross section of the cap 10 increases or decreases as a distance from an inlet or outlet connecting pipe decreases or increases, as recited in claim 1. Thus, Haussmann fails to remedy the deficiencies of Fischer and Olson. For at least these reasons, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 8, 30, and 31

Claims 8, 30, and 31 are rejected under 35 U.S.C. § 103(a) as allegedly being allegedly unpatentable over Fischer in view of Olson, and further in view of U.S. Pub No. 2003/0221819 to Jang (hereafter “Jang”). This rejection is respectfully traversed.

The Office argues on page 5 of the Office Action that the indentations shown in Figures 1 and 2 of Jang serve as longitudinal beads. However, these indentations are not configured such that the cross section of tubes 12 increase or decrease as a distance from an inlet or outlet connecting pipe decreases or increases, as recited in claim 1. Thus, Jang fails to remedy the deficiencies of Fischer and Olson. For at least these reasons, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 9 and 31-35

Claims 9 and 31-35 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fischer, Olson, and Haussmann, and further in view of U.S. Patent No. 3,195,624 to Richards *et al.* (hereafter “Richards”). Claims 9 and 32-35 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fischer, Olson, and Jang, and further in view of Richards. These rejections are respectfully traversed.

The combinations of Fischer, Olson, and Haussmann and Fischer, Olson, and Jang do not disclose or suggest a charge-air cooler or heat exchange having a first and second header box with the features recited in claims 1 and 9.

Richards discloses a heat exchanger that includes a shell 1 enclosing a tube bundle with tubes 3 arranged in five forward banks a', b', c', d', and e' and five return banks a, b, c, d, and e. See Richards at col. 3, lines 24-27, and Figures 1 and 1A. The heat exchanger includes an inlet 7 through which liquid is supplied and the return banks are uncovered so they may discharge to the atmosphere. See Richards at col. 3, lines 31-34, and Figure 1. A head cover 8 with a depression 9 is provided on one end of the heat exchanger. See Richards at col. 3, lines 36-45, and Figure 1. Richards teaches that the arrangement with the head cover advantageously counters impingement attack and provides a more uniform velocity pattern of liquid passing through the banks. See Richards at col. 2, lines 20-64, and col. 5, lines 12-16.

The Office argues on pages 6 and 7 of the Office Action that the head cover of Richards has a cross section that increases along a given direction. However, Richards does not disclose or suggest a charge-air cooler comprising, among other things, a first header box arranged on one side of tubes, wherein the first header box is configured to introduce a medium into the charge-air cooler, and a second header box arranged on another side of the tube, wherein the second head box is configured to discharge the medium from the charge-air cooler, wherein the longitudinal bead of the first header box is configured such that a cross section of the first header box decreases as a distance from the inlet connecting pipe of the first header box increases, wherein the longitudinal bead of the second header box is configured such that a cross section of the second header box increases as a distance to the outlet connecting pipe of the second header box decreases, as recited in claim 1. Claim 9 includes similar language.

The heat exchanger of Richards includes only one head cover 8, not two. Furthermore, the cross section of the head cover 8 decreases as a distance to an outlet decreases, as shown in Figure 1 of Richards, instead of increasing as this distance decreases. Nor would it have been obvious to alter the head cover 8 of Richards to make the cross section increase as the distance to an outlet decreases because Richards teaches that the

structure shown in the drawings of Richards advantageously counters impingement attack and provides a more uniform velocity pattern of liquid passing through the banks.

For at least the reasons discussed above, Richards fails to remedy the deficiencies of Fischer, Olson, and Haussmann and Fischer, Olson, and Jang. Reconsideration and withdrawal of these rejections is respectfully requested.

**New Claim**

New claims 36-38 have been added. Claim 36 depends from claim 1 and claim 37 depends from claim 9. Applicant respectfully submits that claims 36 and 37 are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

Applicant respectfully submits that the references relied upon by the Office do not disclose or suggest all of the features of claim 36 because these references are silent in regard to a method comprising, among other things, a step of using hydroforming to form a semifinished product into a header box comprising a longitudinal bead that extends along at least a long axis of the at least one header box such that a cross section of the header box decreases in area along the long axis of the header box, as recited in claim 36.

**CONCLUSION**

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith,

Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By P.D.S.

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